

ADEQUACY OF REFERRALS TO HIGH RISK PRENATAL CARE

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Abstract: Introduction: There are evidence that maternal-fetal mortality from preventable causes is high, which demonstrates that prenatal care has flaws. Objectives: Check if reasons for referral to high-risk prenatal care coincide with those recommended by the Ministry of Health. Methods: This is a cross-sectional study with quantitative analysis, involving 195 medical records with electronic data collection. Data were collected in a Basic Health Unit from Criciúma through access to the Celk Saúde system and analyzed with SPSS. Statistical tests were performed with a significance level of $\alpha = 0.05$, and therefore, 95% confidence interval. Results: Among the referrals, 136 presented high gestational risk, and the remaining 59 did not meet the criteria. The most prevalent adequate reasons were arterial hypertension (11.8%), thyroid disorders (7. 2%) and gestational diabetes (6.2%). The most inappropriate prevalent criteria were obstetric history of abortion (≤ 2) (6.15%), changes in ultrasound (4.1%) an bleeding (4.1%). **Conclusion:** There is a significant inadequacy of referrals to high-risk prenatal care, wicth could be avoided with more knowledge of recommendations from the Ministry of Health by health professionals. **Keywords:** Prenatal Care. High-Risk. Referral.

INTRODUCTION

Prenatal care is the fundamental assistance provided to pregnant women and their children, from the 1st trimester to the end of pregnancy. It aims to prevent, identify and intervene in maternal and fetal abnormalities, to ensure the birth of a healthy baby, in addition to guiding the future mother for labor and motherhood(1). The importance of this period is due to the well-known association between pediatric and adult diseases, such as cardiovascular diseases, type 2 diabetes and depression, with events that occurred during intrauterine life(2).

Pregnancy, by itself, is already a habitual risk condition. So, in the first prenatal consultation, the risk stratification of the pregnant woman is carried out to define the best place for her follow-up, either in the basic health unit or in the specialized service(3). Risk stratification is performed with an extensive anamnesis, in which the previous morbid history of the pregnant woman is investigated, her family history and laboratory tests are requested. Therefore, some conditions indicate high risk, suggesting that the pregnant woman must be referred to a specialized service, such as heart disease, previous or specific hypertension during pregnancy, infectious diseases, macrosomia, intrauterine growth retardation(4).

Maternal and infant mortality is still very prevalent in developing countries(5). This fact is so important that at the United Nations Millennium Summit, the reduction of infant mortality and the improvement of maternal health were adopted as one of the development goals(6). However, Brazil has not reached the goal of reducing the maternal mortality ratio by 5.5% per year, stagnating at 4% per year. When analyzing the cases individually, it was noted that there is a major failure in prenatal care, as most deaths were preventable, with hypertensive diseases being the most frequent cause in the state of Santa Catarina. The pregnant women did not have the minimum number of consultations, the interval between the last consultation and delivery was too long and there was no adequate investigation of risk factors(5). Therefore,

It is clear that certain factors interfere with the progress of prenatal care. Younger pregnant women and a low level of education are often associated with poor adherence to the recommendations and the number of consultations below the indicated, due to lack of knowledge of the susceptibility of their condition. Skin color is another indicator,

with black women having a higher prevalence of inadequate prenatal care when compared to brown and white people. Higher family income and performance of paid activity during the gestational period are factors that increased suitability, along with a previous history of abortion and primigravidae. It was also found that the stability of the relationship with her partner, by interfering with the pregnant woman's psychology, influences the adoption of recommended measures(7).

Referral to high-risk prenatal care is a recent and still unknown process. It is common for pregnant women to be referred only after 28 weeks, due to the failure to identify early factors or late complications. However, the referral made at the beginning of prenatal care does not guarantee that she will receive specialized care quickly. There is a lack of training of health professionals in high-risk prenatal care. Due to late referrals, there is a reduced number of consultations, which leads to fewer tests and a higher prevalence of avoidable complications. In addition, the record of medical records, important for the horizontality of care, is done negligently. In turn, erroneous referrals increase patient assessment time and delay the start of specialized care, public health(4).

In this sense, the current study aims to find out if patients who are referred to high-risk prenatal care are referred correctly, considering that inadequate referrals, in addition to burdening the public health system, can remove vacancies from pregnant women who really need specialized attention.

The present work proposes to evaluate if the conduction to high-risk prenatal care coincides with the recommendations established by the Ministry of Health in order to optimize the referral system and bring possible improvements to high-risk prenatal care in the municipality where it will be developed. the work.

METHODS

This is a cross-sectional study, with data collection from electronic medical records. In the present study, 195 patients referred to high-risk prenatal care (PNAR) at UBS Santa Luzia in Criciúma, Santa Catarina, in 2018, were evaluated.

First, the consultations of patients referred to the high-risk prenatal care of the Health Unit in the year 2018 were listed, through the Celk Saúde system. Then, the pregnant women's data and the reasons for transfer to the PNAR were collected and it was verified whether they added up to the necessary points for referral, according to the table with the criteria pre-established by the Rede Cegonha de Santa Catarina. This table contains categories with risk factors that score from 0 to 10, requiring a minimum of 10 points to refer to the PNAR. The categories include: age, family situation, acceptance of pregnancy, education, smoking, nutritional assessment, obstetric history and current risk pathologies, both gynecological and obstetric, as well as clinical or surgical. Furthermore, it is mandatory to contain some punctuation of the categories referring to the pathology. Therefore, the sum of 10 points or more classifies the pregnant woman as high risk, from 5 to 9 as medium risk, and up to 4 points as low risk.

Data analysis was performed at the Laboratory of Research in Computing and Quantitative Methods (LACOM) of Universidade do Extremo Sul Catarinense. The collected data were analyzed using the IBM Statistical Package for the Social Sciences (SPSS) software, version 21.0. The quantitative variable was expressed as mean and standard deviation. Qualitative variables were expressed as frequency and percentage.

Statistical tests were performed with a significance level of $\alpha = 0.05$ and, therefore, a confidence level of 95%. The investigation of the existence of the association between

qualitative variables was carried out through the application of Linear by Linear, Likelihood Ratio and Fisher's Exact tests, followed by residual analysis when statistical significance was observed.

This work was only started after approval by the Research Ethics Committee and Humans, under opinion number 3,421,831.

RESULTS

A total of 195 medical records were analyzed, of which 136 had high gestational risk, 12 medium risk and 47 low risk. Among the analyzed pregnant women, ages between 14 and 42 years and an average of 28.64 years were found.

± 7.008 years. The values obtained for body mass index (BMI) were between 17.3 and 56.89 kg/m², with 72.5% of pregnant women outside the eutrophic range. As for the level of education, 51% of pregnant women do not have completed high school. Only 41.7% were referred in the first quarter. 10.8% of the women reported an unstable family situation. pregnant women. Non-acceptance of pregnancy was present in 2.6% of the medical records. Finally, the percentage of smokers was 12.8% (Table 1).

The most prevalent criteria scoring high risk were: previous arterial hypertension (11.8%), thyroid disorders (7.2%), hypertensive disease of pregnancy (6.7%), gestational diabetes (6.2%), syphilis (5.1%), AIDS (4.6%) and psychiatric illness (4.6%). The criteria that score the most frequent medium risk were the history of: miscarriage (≤ 2) (22.1%), premature birth (9.2%), placental abruption (1.5%), fetal malformation (1, 5%)

(Table 2).

In turn, 59 of the referrals were not high risk, equivalent to 30.26% of these. They occur due to obstetric history of: abortion (≤ 2) (27.9% of the total referrals for this criterion), premature delivery (27.8%),

premature membrane detachment (66.7%), fetal malformation (66, 7%) (Table 3). The most frequent inappropriate reasons that did not correspond to any referral criteria were: alteration in the ultrasound (4.1%), bleeding (4.1%), abdominal pain (2.1%), threat of preterm labor (1.5%), depressive symptoms (1.5%) (Table 4).

When crossing the data on gestational risk with the age of the pregnant women, it was found that 1% of them were in the age group below 15 years, with 50% in this category at high risk; 75.4% were between 15 and 35 years old, with 73.5% at high risk, and 23.6% over 36 years old, with 58.7% at high risk (Table 5).

BMI data were also crossed with hypertension and diabetes mellitus, and an N = 18 of the total of 19 hypertensive pregnant women above the eutrophic range was obtained, and an N = 5 of 6 diabetic pregnant women, in turn (Table 6).

Finally, the unstable family situation was compared with sexually transmitted diseases, and it was found that an N = 3 for both syphilis and HIV were in this category, corresponding to 30.0% and 33.3% respectively (Table 7).

DISCUSSION

When analyzing the data on the beginning of the PNAR, 20.8% of pregnant women started specialized care in the third trimester of pregnancy. According to Costa and Perondi(4), it was found that 58.9% of pregnant women started high risk after 28 weeks. However, even below what is found in the literature, the data from this research indicates the late start of prenatal care in a considerable number of patients, which is worrying because it is the role of every prenatal consultation to identify pregnant women with some risk factor and refer them to the high-complexity outpatient clinic(9). Therefore, this fact may mean that health professionals are unaware of risk factors, which is an aggravating factor, as early

care can mediate the control of these factors and contribute to favorable maternal-fetal outcomes(10).

The mean age of all pregnant women analyzed was 28 years, with 1.0% under 15 years and 26.6% over 35 years. According to Sampaio AF et al(10), the mean age of high-risk pregnant women was also 28 years, with 2.7% of them under 15 years of age and 21% over 35 years of age. Pregnancies in these extremes are associated with prematurity, low birth weight and surgical delivery(8). However, an N = 16 pregnant women were referred exclusively because of their age, corresponding to 8.2% of them, which demonstrates the inadequacy of referrals because, even with the associated risks, they can be managed in primary care(11).

The assessment of the body mass index of high-risk pregnant women revealed a high prevalence of obesity and overweight - both account for 70.9% of the cases. According to Costa e Cura et al (15), 52.4% of pregnant women were overweight. The literature broadly addresses this aspect, due to the high risk of developing complications.pregnancies, both in pregnant women with a previous high BMI and in weight gain during pregnancy, such as: diabetes, hypertension, preeclampsia; fact that is corroborated by this research(11). It is crucial for these pregnant women to have adequate awareness and guidance to reduce the risks addressed, prevent weight retention after childbirth and the development of psychiatric diseases, such as depression and anxiety(12-13). There was no case of a patient referred exclusively by BMI, which would not fulfill the referral criteria, but the association of BMI with arterial hypertension and endocrinopathies was high - 94.8% of hypertensive patients were overweight or obese, and 83.3% of diabetics also - demonstrating that the knowledge of health professionals about this aspect of gestational

risk is adequate.

There are a number of diseases directly associated with high BMI, such as hypertensive diseases (previous and gestational arterial hypertension), which had a prevalence of 18.5%, thyroid alterations with 7.2%, and gestational diabetes (GDM) (6 .2%) - these were the most frequent isolated reasons for referral(11). The results of hypertensive diseases and GDM were expected, as the literature shows that hypertension is the most common factor identified in prenatal care in 10% of high-risk pregnancies, followed by diabetes(13-14). In 5% of cases, hypertension is complicated, a fact associated with progression to preeclampsia, which may generate the need for immediate termination of pregnancy(15). As for diabetes, American studies show that gestational diabetes is currently the most common medical complication of pregnancy, affecting 5-6% of women in the United States (16-17). According to Eades C et al(18), it is estimated that GDM affects 7% of pregnant women around the world. The children of women with GDM can be born with fetal macrosomia, and the long-term associated risks include childhood overweight and metabolic factors of cardiovascular disease(19). The data resulting from thyroid diseases in relation to gestational diabetes mellitus were higher (7.2% x 6.7%), which is not supported by the literature, requiring further studies to explain why this fact occurs in the region under study. . and the long-term associated risks include childhood overweight and metabolic factors of cardiovascular

disease(19). The data resulting from thyroid diseases in relation to gestational diabetes mellitus were higher (7.2% x 6.7%), which is not supported by the literature, requiring further studies to explain why this fact occurs in the region under study. .

Other factors that deserve to be highlighted in the appropriate referral to the PNAR are sexually transmitted diseases, which resulted in a prevalence of 5.1% for syphilis and 4.6% for HIV. In Brazilian studies, the prevalence found was 2.44% for HIV and 2.6% for syphilis(21-22). Manenti SA et al(23) suggest that HIV cases in pregnant women are increasing over the years, especially in southern Brazil, which makes it necessary to monitor the mother during prenatal care and monitor the baby's HIV status in the postpartum period. childbirth. In addition, this research identified a percentage of 30% in the unstable family situation in Syphilis, and 33.3% in HIV. This fact is correlated with the increasingly younger age of first sexual intercourse, and therefore,

As for inappropriate referrals, fetal causes and obstetric history were obtained which, in the absence of other reasons, correspond to medium-risk prenatal care. This fact is due to the probable overzealousness of health professionals, theoretically for fear of diagnosing a healthy pregnancy, confused when intercourse occurred in the previous gestational history(26). The only current risk pathology found in medium-risk pregnancies was threatened abortion (33.3%). This is the most common complication of pregnancy, with a prevalence of 15 to 20% in pregnancies, with spontaneous regression in more than half of the cases; it is characterized by minor bleeding that can be managed with expectant treatment accompanied by US in primary care(27).

In addition to the aforementioned reasons, reasons that did not fit the criteria

established by the Ministry of Health and Rede Cegonha were found in the current study. As they did not fit into any category, they were classified as having low gestational risk, and therefore, the referral to high-risk prenatal care was inappropriate. These data were not detailed in the medical records, which is a factor for broad interpretation of the results. "Bleeding" and "abdominal pain" represented unspecific complaints of high prevalence (6.2%), which can be translated as threat of abortion, as discussed above.

Threat of preterm labor was described in 1.5%, but as it was not described as a threat of abortion, it was not included in SPSS. This fact reflects how the technical language when it comes to obstetrics is not uniform, as can already be observed in threatened abortion, which is a term used inaccurately, and bleeding that in the medical records were not added with important details such as volume(28). Unspecified "Headache" and "depressive symptoms" were also reported, which together with "nausea" and "vomiting", do not fit the referral factors, not even in more serious situations such as hyperemesis gravidarum. There was probably a larger story in the anamnesis, but this was not reported in the medical record. However, the most significant finding was changes in the ultrasound, with a 4.1% prevalence.

CONCLUSION

The statistics of the present study showed that there is a significant inadequacy of referrals to high-risk prenatal care, which could be avoided with greater knowledge of health professionals about the recommendations of the Ministry of Health. The lack of updated Brazilian studies on the specific adequacy of high-risk prenatal care was also observed.

	Mean ± SD, n (%) n = 195
Age (years)	28.64 ± 7.01
IMC	
lowweight	3 (1.6)
weightNormal	50 (27.5)
overweight	51 (28.0)
obesity	78 (42.9)
noinformed	13
Education	
incomplete elementary school	17 (11.1)
complete primary education	58 (37.9)
incomplete high school	3 (2.0)
complete high school	66 (43.1)
incomplete higher education	1 (0.7)
complete higher education	8 (5.2)
Uninformed	42
Gestational Period	
first trimester	80 (41.7)
second trimester	72 (37.5)
third quarter	40 (20.8)
uninformed	3
Unstable family situation	
Yes	21 (10.8)
acceptance of pregnancy	
5	(2.6)
Smoking	
Yes	25 (12.8)
Low Gestational Risk	
Risk	47 (24.1)
Medium	12 (6.1)
High	136 (69.7)

Table 1. Characteristics of pregnant women treated at the high-risk unit

	n (%)
Abortions - obstetric history (≤ 2)	43 (22.1)
HAS	23 (11.8)
Premature	18 (9.2)
thyroid changes	14 (7.2)
Hypertensive disease of pregnancy	13 (6.7)
Gestational diabetes	12 (6.2)
Syphilis	10 (5.1)
HIV	9 (4.6)
psychiatric illness	9 (4.6)
twin	9 (4.6)
delayed uterine growth	7 (3.6)
Eclampsia	7 (3.6)
repeat ITU	7 (3.6)
birth	7 (3.6)
diabetes mellitus	6 (3.1)
polyhydramnios/oligohydramnios	5 (2.6)
Epilepsy and neurological disease	4 (2.1)
hemopathies	4 (2.1)
congenital malformation	4 (2.1)
threat of abortion	3 (1.5)
placental abruption	3 (1.5)
severe kidney disease	3 (1.5)
fetal malformation	3 (1.5)
Pre eclampsia	3 (1.5)

Table 2. Frequency of criteria for referral to high-risk pregnancy clinics

Source: Survey data, 2020.

	Gestational risk			Value - p†
	Low	Medium	High	
	n =47n	=12n	= 136	
Obstetric Background (≤ 2)				
Yes	0 (0.0)	12 (27.9)	31 (72.1)	0.144
No	40 (26.3)	7 (4.6)	105 (69.1)	
Obstetric Background – Premature Childbirth				
Yes	0 (0.0)	5 (27.8)b	13 (72.2)	< 0.001
No	47 (26.6)b	7 (4.0)	123 (69.5)	
Obstetric Background - Placental abruption (DPP)				
Yes	0 (0.0)	2 (66.7)b	1 (33.3)	0.015
No	47 (24.5)	10 (5.2)	135 (70.3)	
Obstetric Background - Fetal malformation				
Yes	0 (0.0)	2 (66.7)b	1 (33.3)	0.015
No	47 (24.5)	10 (5.2)	135 (70.3)	
Current risk pathology - Threat of abortion				
Yes	0 (0.0)	1 (33.3)	2 (66.7)	0.195
No	47 (24.5)	11 (5.7)	134 (69.8)	

Table 3. Medium-risk gestational referrals

† Value obtained after applying the test of Likelihood Ratio; b Statistically significant value after residual analysis; Source: Survey data, 2020.

	n (%*)
Current conditions	30 (15.6)
Change in ultrasound	8 (4.1)
bleeding	8 (4.1)
Abdominal pain	4 (2.1)
TPP threat	3 (1.5)
depressive symptoms	3 (1.5)
Anemia	2 (1.0)
headache	2 (1.0)
discharge	2 (1.0)
Late start of prenatal care	2 (1.0)
nephrolithiasis	2 (1.0)
Screening/risk of preeclampsia	2 (1.0)
Change in blood glucose	1 (0.5)
Colic	1 (0.5)
Constipation	1 (0.5)
hypertensive peak	1 (0.5)
Thrombocytopenia	1 (0.5)
nausea	1 (0.5)
vomiting	1 (0.5)
Preconditions	7
DPP history	3 (1.5)
Tummy tuck 6 months ago	1 (0.5)
stroke history AVC	1 (0.5)
history of depression	1 (0.5)
History of drug use	1 (0.5)
Chronic conditions	6
controlled asthma	1 (0.5)
Ovarian cyst	1 (0.5)
liver nodule	1 (0.5)
SAAF sic	1 (0.5)
Blood type	1 (0.5)
thrombophilia sic	1 (0.5)
Personal conditions	7
Age	3 (1.5)
By request	2 (1.0)
low maternal weight	1 (0.5)
Weight loss	1 (0.5)

Table 4. Referrals by non-pre-established criteria

*Percentages obtained based on the 195 patients in the sample; Source: Survey data, 2020.

	Age years)			Value - p†
	less than 15 n = 2 (1.0%)	From 15 to 34 n = 147 (75.4%)	Greater and equal to 35 n = 46 (23.6%)	
Gestational risk				
Low	1 (50.0)	31 (21.1)	15 (32.6)	0.366
Medium	0 (0.0)	8 (5.4)	4 (8.7)	
High	1 (50.0)	108 (73.5)	27 (58.7)	

Table 5. Gestational risk x age group

	BM				Value - p†
	Low weight n = 3 (1.5%)	suitable weight n = 50 (25.6%)	overweight n = 51 (26.1%)	Obesity n = 78 (40%)	
Has					
Yes	0 (0.0)	1 (5.3)	6 (31.6)	12 (63.2)	0.044
No	3 (1.8)	49 (30.1) ^b	45 (27.6)	66 (40.5)	
diabetes mellitus					
Yea	0 (0.0)	1 (16.7)	2 (33.3)	3 (50.0)	0.888
No	3 (1.7)	49 (27.8)	49 (27.8)	75 (42.6)	

Table 6. Data Crossing: SAH and DM x IMC

† Value obtained after application of the Likelihood Ratio test;

^b Value statistically significant after residue analysis; Source: Survey data, 2020.

	Unstable family situation		Value - p††
	Yes n = 21		
Syphilis			
Yes 3	(30.0)		0.079
No 18	(9.7)		
HIV			
Yes 3	(33.3)		0.059
No 18	(9.7)		

Table 7. Crossing of data: DSTs x unstable family situation

†† Value obtained after application of Fisher's exact test; Source: Survey data, 2020.

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